

Foundational Tasks of the GEO Work Programme 2023-2025

This document is presented to the 19th Plenary for decision.

1 OVERVIEW

Foundational Tasks are an essential part of the GEO Work Programme and they are designed to provide important support and enabling functions to Flagships, Initiatives, and Pilot Initiatives to allow GEO to achieve its Strategic Objectives.

Foundational Tasks were typically developed during the same period with Flagships, Initiatives and Pilot Initiatives. However, the development of the Foundational Tasks of the GEO Work Programme 2023-2025 was postponed to 2023 by the decision of the Programme Board at its 23rd meeting to reflect the input of several ongoing processes in GEO, including the review of GEOSS and development of Post-2025 Strategy.

Since September 2022, the Foundational Tasks have been developed through the following process:

- An initial consultation was made with the Programme Board for their initial thoughts on the revision of the Foundational Tasks in September 2022;
- Three Foundational Tasks, namely GEO Work Programme Coordination, GEO Engagement Priorities Coordination and Integration, and Data and Knowledge Management, were proposed to the Programme Board at its 25th Meeting in February 2023 and this structure remains unchanged since then;
- A strengthened Work Programme Team in the GEO Secretariat was introduced resulting from the revised GEO Secretariat Concept of Operations 2023-2025 approved at the 60th Executive Committee meeting in March 2023. This enhances the capability of implementation of the first Foundational Task ‘GEO Work Programme Coordination’;
- A joint Working Group Survey was launched in April 2023 to assess the impact and usefulness of Working Groups as part of the Foundational Task review process. The Programme Board endorse the continuation of the 5 Working Groups with flexible arrangements and support of the GEO Secretariat as appropriate, noting the focus on GEO Work Programme activities as well as concrete and achievable outputs;
- Following guidance of the Programme Board, an updated document on Foundational Tasks were prepared for its 26th meeting in June 2023 to map the changes versus the 2020-2022 Foundational Tasks and provide the rationale for the components that were retained, removed and modified. This version also refined the description of Foundational Tasks, including their Expected Outcomes, Components and Implementing Bodies;

- The Terms of Reference for the GEO Infrastructure Development Task Team (GIDTT) along with its revival, were approved at the 61st Executive Committee Meeting. The GIDTT will be one of the key implementing bodies of the Foundational Task ‘Data and Knowledge Management’;
- A third version of the Foundational Tasks was presented to the Programme Board for approval at its 27th meeting. Based on comments received at this meeting, a fourth version was circulated to and endorsed by the Programme Board on a no-objection basis;
- The version endorsed by the Programme Board is presented to the 19th Plenary for final approval.

2 PROPOSED FOUNDATIONAL TASKS

The proposed Foundational Tasks focus on the functions that will enable the GEO Work Programme to achieve the objectives of the 2023-25 GEO Work Programme, as established by the Programme Board. This includes an accelerated transition from research outputs to sustained services, as well as a focused, user-centred and impact-driven GEO Work Programme that advances GEO as the leading entity for global Earth observation-based solutions.

2.1 GEO Work Programme Coordination

The first Foundational Task coordinates the development, implementation and monitoring of the GEO Work Programme under the oversight of the Programme Board. It also provides the operational capacity to advise the GEO Programme Board and to implement their decisions and recommendations. To realize its enabling functions, this task will need to support the GEO Work Programme in developing large-scale integrated activities that are based on additionality, efficiency, effectiveness, and impact. The task will also develop tools, methodologies, and indicators for conducting analysis to support the GEO Work Programme community and the Programme Board.

2.1.1 *Expected Outcomes*

- GEO Programme Board has access to information, advice and other support required to fulfil its functions and duties.
- Decisions by GEO Members and GEO governing bodies are informed by analyses and reports based on regular collection of data and information about the GEO Work Programme activities.
- Leads and participants of GEO Work Programme activities have the information, tools and support required to effectively implement their respective activities.

2.1.2 *Components*

- **Programme Board Support:** Preparation of Programme Board meeting agendas and documents, in consultation with the Programme Board co-chairs. Preparation of Programme Board reports to other GEO governance bodies. Providing logistics support to Programme Board meetings. Supporting the organization of the GEO Symposium;

- **GEO Work Programme Support Toolkit Development:** Development of toolkits¹ that support implementation of the entire GEO Work Programme, including capacity development, communications, knowledge management, monitoring and evaluation, resource mobilization, etc;
- **GEO Work Programme Post-2025 Incubators Development:** Experimenting models of the next generation Flagships and Initiatives that can provide trusted and sustained Earth observation-based operational services to multiple environmental agreements;
- **GEO Work Programme Progress and Impact Monitoring:** Development of indicators that measure the success of the GEO Work Programme and the maintenance of databases for GEO Work Programme monitoring. Analysis of monitoring data and preparation of reports on the progress and impact of the GEO Work Programme;
- **Advancing Equity, Diversity and Inclusiveness in the GEO Work Programme:** Leveraging the network of the Youth Community of Practices, the GEO Indigenous Alliance and the Regional GEOs to increase the active participation of youth, indigenous people and other under-represented groups in the GEO Work Programme;
- **Capacity Sharing for the Uptake of GEO Work Programme Outputs and GEO Members' Operational Services:** Understanding the local and national needs of GEO Member countries to allow for partnership between the GEO Work Programme activities and countries in co-designing products and services. Facilitating the wider use of GEO Members' existing operational services by other countries in need.

2.1.3 *Implementing Bodies*

- Programme Board;
- Capacity Development Working Group;
- Equality, Diversity and Inclusiveness Subgroup;
- GEO Indigenous Alliance;
- Youth Community of Practice;
- GEO Secretariat.

2.2 **Engagement Priority Coordination and Integration**

The second Foundational Task aims at furthering the engagement of GEO Work Programme with UN agencies and other international organizations responsible for global policy frameworks. More specifically on GEO's Engagement Priorities: the UN 2030 Agenda on Sustainable Development; the Paris Agreement on Climate Change, the Sendai Framework on Disaster Risk Reduction, and the New Urban Agenda. With increased policy relevance, the Work Programme is oriented towards integration along the Earth observations value chain as well as impact. To realize its enabling functions, this task will

¹ These toolkits primarily focus on enhancing internal capacity of Work Programme activities and do not encompass tools designed for converting Earth observation data into knowledge products, such as the EO Risk Toolkit or the EO Toolkit for Sustainable Cities and Human Settlements, for instance.

provide support, guidance and tools for the GEO Work Programme activities to understand, engage in, and respond to global, regional and national policy needs.

2.2.1 *Expected Outcomes*

The implementation of a consistent and coordinated approach for engaging UN agencies and other international policy organizations relevant to the GEO Engagement Priorities, across the GEO community. The development of an integrated, demand-driven, policy-relevant GEO Work Programme. Strengthened policy connections in the GEO community and beyond.

2.2.2 *Components:*

- **Engagement of GEO Work Programme in Global Policy Frameworks:** Furthering GEO Work Programme activities' engagement with UN agencies and other international organizations to better align GEO's work with relevant global policy frameworks and contribute to their implementation with Earth observation-based solutions;
- **Integration across GEO Engagement Priorities:** Identifying issues relating to multiple GEO Engagement Priorities (Climate Action, Disaster Risk Reduction, Urban Resilience and Human Settlements, and Sustainable Development) and facilitating integration across these priorities;
- **Promotion of Key Programmatic Directions in GEO Work Programme:** Supporting the identification and development of key programmatic directions in the GEO Work Programme in line with the objectives of relevant global policy frameworks including GEO's engagement priorities, as well as assessed countries' needs and priority interests, including through the Post-2025 incubators;
- **Reinforcement of GEO Work Programme's Connections with National Policy:** Building or strengthening connections between GEO Work Programme activities and national ministries in GEO Member countries to support advocacy in global policy fora and to enable national-level policy development and implementation of Earth observation-based solutions.

2.2.3 *Implementing Bodies*

- Climate Change Working Group;
- Disaster Risk Reduction Working Group;
- Resilient Cities and Human Settlements Working Group;
- GEO Secretariat.

2.3 *Data and Knowledge Management*

The third Foundational Task aims to fill data gaps (including satellite and in situ, among others) of GEO Work Programme activities, publish knowledge packages produced by GEO Work Programme activities, and maintain/evolve the infrastructure that enables these purposes.

2.3.1 *Expected Outcomes*

- Increased number of free and open Earth observations datasets, in adherence with the GEO Data Sharing Principles and Data Management Principles;
- Increased number of knowledge packages developed by (or made available to) GEO Flagships, Initiatives and Pilot Initiatives;
- Lower barriers for uptake of Earth observations and open-source technology to produce applications for environmental monitoring;
- Documented user expectations and requirements regarding GEO Infrastructure.

2.3.2 *Components*

- **Satellite Data Access and Use Coordination:** Promoting uptake of satellite observations into space agency repositories, data aggregators and cloud storage for use in analyses and global policy reporting, linking it closely with the GEO Knowledge Hub. Advocating production of integrated multi-satellite Analysis Ready Datasets. Continuing promotion of open access to satellite imagery as a priority of GEO. Facilitating availability of multi-user licenses for very high-resolution satellite imagery upon requests of GEO Members;
- **In Situ Data Access and Use Coordination:** Improving access to in situ data and provide coordination and repository services where needed. Advocating new data collection systems and encourage integration of user requirements with respect to in situ data, which will be closely linked with the GEO Knowledge Hub;
- **Advancing Data Sharing and Management:** Continuing the promotion of free, full, open, and timely access to Earth observation datasets, products and services. Maintaining dialogue with governments and support the uptake and implementation of the GEO Data Sharing and Data Management Principles by GEO Members and Participating Organizations, and raising awareness of the technical, organizational, and resource implications of their implementation;
- **GEO Infrastructure Operation:** Integrating the operation of the GEOSS Platform and the GEO Knowledge Hub as complementary components of the GEO Infrastructure. Continuing establishment of interoperability with data providers (especially in situ) and Data Cubes. Continuing the implementation of the GEO Knowledge Hub as a digital repository for the GEO Work Programme activities to contribute curated, authoritative, validated and reproducible content for evidence-based reporting on policy commitments and decision-making;
- **Integration of models and new technologies:** Supporting algorithm and model development, and advocating integration of information from in situ, airborne and space-based observations through data assimilation and models. Facilitating access to model data (e.g. initialization, boundary conditions, reanalyses, output) and increasing sharing of the modelling and analysis methods needed to transform data into useful products, especially for developing countries. Advancing the integration of Earth observations, models, and innovative technologies like cloud computing machine learning, artificial intelligence, digital twins that can lead to the development of insightful and actionable knowledge products for decision making. Providing capacity development opportunities to facilitate the uptake of new technologies;

- **GEO Infrastructure Evolution:** Advancing the evolution of the GEO infrastructure based on analysis of the evolving landscape of information technology, changing patterns of production and use of Earth observation products and services, and the specific user requirements expressed by GEO Flagships, Initiatives and Pilot Initiatives. The GEO Infrastructure evolution implies the integration of the current GEOSS Platform and the GEO Knowledge Hub into a single and coordinated platform.

2.3.3 *Implementing Bodies*

- GEO Infrastructure Development Task Team;
- Committee on Earth Observation Satellites, and other relevant Participating Organizations;
- Data Working Group;
- GEO Secretariat.

3 RECOMMENDATION

The Programme Board recommends that the Plenary approve the Foundational Tasks as proposed above.

Following the endorsement, the Programme Board will request each of the Working Groups to call for members, revise the Terms of Reference, and present a workplan of key activities and deliverables to the 28th Programme Board meeting (expected in February 2024).